WHAT IS CLAIMED IS:

1. An apparatus comprising an optical transmission medium optically coupled to a photodetector in an optical coupling region and an optical thick film disposed on said photodetector in said optical coupling region and having a thick film refractive index between a first refractive index of air and a second refractive index of said photodetector.

2. The apparatus as in claim 1, wherein said photodetector includes an active area and said optical transmission medium includes a light delivery location where light exits said optical transmission medium, said optical coupling region including said active area and said light delivery location.

3. The apparatus as in claim 1, wherein said second refractive index comprises a refractive index of material that forms a facing surface of said photodetector in said optical coupling region.

4. The apparatus as in claim 3, wherein said material comprises silicon nitride.

5. The apparatus as in claim 3, wherein said facing surface includes a surface of an active area of said photodetector.

6. The apparatus as in claim 3, wherein said photodetector comprises a substrate with an active area on a first surface of said substrate and along an optical path of light coupled from said optical transmission medium to said photodetector, and said facing surface is an opposed surface of said substrate.

7. The apparatus as in claim 1, wherein said optical transmission medium has a smooth end face and said optical thick film extends continuously between said smooth end face and said photodetector.

8. The apparatus as in claim 1, further comprising an optical source that causes light having a wavelenth of one of 1310nm and 1550nm to propagate through said optical transmission medium.

9. The apparatus as in claim 1 wherein said optical transmission medium comprises an optical fiber.

10. The apparatus as in claim 9, wherein light exits said optical fiber at an end face of said optical fiber.

11. The apparatus as in claim 9, wherein light exits said optical fiber at a light delivery location formed on a sidewall of said optical fiber.

12. The apparatus as in claim 1, wherein said optical thick film is formed of silicone.

13. The apparatus as in claim 1, wherein said thick film refractive index lies within a range of about 1.34 to 1.45.

14. The apparatus as in claim 1, further comprising a lens disposed between said optical transmission medium and said photodetector, said lens directing light from said optical transmission medium to said photodetector.

15. The apparatus as in claim 1, wherein said optical thick film includes a thickness within the range of 10 - 30 microns.

16. The apparatus as in claim 1, wherein said second refractive index lies within one of a range of about 3.0 to 3.5 and a range of about 1.8 to 2.2.

17. The apparatus as in claim 1, wherein said optical thick film reduces an amount of light reflected between air and said photodetector.

18. An apparatus comprising an optical transmission medium optically coupled to a photodetector in an optical coupling region and a discrete optical thick film formed on said photodetector, said discrete optical thick film increasing an amount of light coupled from said optical transmission medium to said photodetector when light propagates in said optical transmission medium.

19. An apparatus comprising an optical transmission medium optically coupled to a photodetector in an optical coupling region that includes a smooth surface of said optical transmission medium, and an optical thick film coating interposed between said smooth surface and said photodetector.

20. The apparatus as in claim 19, wherein said optical thick film coating extends continuously between said smooth surface and said photodetector.

21. The apparatus as in claim 20, wherein said optical transmission medium comprises an optical fiber and said smooth surface comprises a sidewall of said optical fiber.

22. The apparatus as in claim 19, wherein said smooth surface has a surface roughness no greater than 0.1 microns R_a.

23. The apparatus as in claim 19, wherein said optical thick film coating has a refractive index at least one of between a first refractive index of air and a second refractive index of said optical transmission medium and between said first refractive index and a third refractive index of said photodetector.

24. The apparatus as in claim 19, wherein said optical thick film coating comprises silicone.

25. A method for increasing optical coupling efficiency between an optical fiber and a photodetector, comprising:

providing an optical fiber and a photodetector;

optically coupling said optical fiber to said photodetector in an optical coupling region; and

disposing a coating on said photodetector in said optical coupling region, said coating having a coating refractive index between a first refractive index of air and a second refractive index of a surface of said photodetector upon which said coating is disposed.

26. The method as in claim 25, further including providing a lens between said optical fiber and said photodetector in said optical coupling region.

27. The method as in claim 25, wherein said disposing includes forming said coating of silicone.

28. The method as in claim 25, further comprising polishing an end face of said optical fiber and wherein said disposing further includes forming said coating to extend continuously between an end face of said optical fiber and said photodetector.

29. The method as in claim 25, further comprising polishing an end face of said optical fiber and causing light propagating through said optical fiber to exit through a sidewall of said optical fiber, and wherein said disposing further includes forming said coating to extend continuously between said sidewall and said photodetector.